

ABSTRACT

This invention improves the reliability of an Electro-chemical reference half-cell that contains 2 or more electrolyte chambers isolated with porous liquid junctions. The purpose of the reference half-cell is to provide a stable ionic contact to a solution, resulting in the output potential being a function only of the ion specific membrane. In this invention, the primary half-cell is isolated from the process by a second or third electrolyte chamber. In one of the secondary chambers an identical half-cell is inserted to monitor the difference between the primary junction and one of the secondary chambers that are being altered over time. The difference between these two halve cells are monitored and the user is alerted of the degradation of the exposed cell. This indication occurs in advance of significant attack of the primary reference half-cell.